

**Notice of Allowability**

Application No.

10/815,662

Examiner

Allen C. Ho

Applicant(s)

KOJIMA ET AL.

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed on 26 May 2005.
2. ☒ The allowed claim(s) is/are 22-34.
3. ☒ The drawings filed on 02 April 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>012005, 052005</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 22-34 are allowed.
2. The following is an examiner's statement of reasons for allowance:

With regard to claims 22 and 28-34, the prior art fails to teach or fairly suggest a radiological imaging apparatus comprising a counter that uses the  $\gamma$ -ray detection signals output from three or more of the plurality of radiation detectors within a pre-selected period of time and the positional information about the three or more radiation detectors that have output the  $\gamma$ -ray detection signals so as to determine which of the three or more radiation detectors have detected un-scattered  $\gamma$ -rays as claimed.

With regard to claims 23 and 24, the prior art fails to teach or fairly suggest a radiological imaging apparatus comprising a counter that, when  $\gamma$ -ray detection signals are output from three or more of the plurality of radiation detectors within a pre-selected period of time, uses the positional information about at least two of the radiation detectors, the energy detection values of at least two of the radiation detectors, and the positional information about radiation detectors that have detected one of a pair of the  $\gamma$ -rays, so as to determine the attenuation sequence, initial incidence position, and initial incidence direction of the remaining one of the pair of  $\gamma$ -rays as claimed.

With regard to claims 25-27, the prior art fails to teach or fairly suggest a radiological imaging apparatus comprising a counter that, when detection signals are output from three or more of the plurality of radiation detectors within a pre-selected period of time, uses the

positional information about three or more of the radiation detectors and the energy detection values of three or more of the radiation detectors in order to determine the attenuation sequence, initial incidence position, and initial incidence direction of the  $\gamma$ -rays as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Kurfess (U. S. Patent No. 6,484,051 B1) disclosed a coincident multiple Compton scatter nuclear medical imager.
- (2) Nutt *et al.* (U. S. Patent No. 6,449,331 B1) disclosed a combined PET and CT detector.
- (3) Chapuis *et al.* (U. S. Patent No. 6,326,624 B1) disclosed a device and method for determining a position of an event.
- (4) Tümer (U. S. Patent No. 5,821,541) disclosed an apparatus for radiation detection.
- (5) Rohe *et al.* (U. S. Patent No. 5,567,944) disclosed a Compton camera for in vivo medical imaging of radiopharmaceuticals.
- (6) Kamae *et al.* (U. S. Patent No. 4,857,737) disclosed gamma ray measurement utilizing multiple Compton scattering.

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(7) Wong (U. S. Patent No. 4,677,299) disclosed a multiple layer PET camera.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho  
Primary Examiner  
Art Unit 2882

03 June 2005